

ABSTRACT

The miniaturization of electrodynamic converters causes an over-proportional reduction in power conversion density. The particular functional arrangement of the elements inside the power converter makes it possible to involve nearly the entire volume in the power conversion process. Flux concentration and multiple functions of different components permit an increase in the power conversion density in comparison to conventional miniaturizable converters. By rotating the toothed element wheel (9), an alternating magnetic flux from the permanent magnet elements (14) of the alternating axially polarized magnet ring (13) is conducted through the holed pin (1) via different magnet flux elements (21). Axially/radially oriented magnetic circuits (19) surround a flat coil (11) resting on the holed pin (1) and exert an induction action there. The power converter has a simple and robust design as well as a high power conversion density with regard to volume, and can be produced using conventional manufacturing techniques. In addition, very small sizes exhibiting a high power density can be realized.